

Response to Office Action
SN 10/697,404

REMARKS

I. Status of the Claims

Claims 1-21 are pending. Claims 20 and 21 have been allowed. Claims 1, 2, 4-6, 8-16, 18, and 19 are presently rejected by the Examiner. Claims 3, 7, and 17 are objected to.

II. Claim Rejection Under 35 USC §102(b)

A. Evling Does Not Anticipate

The Examiner has rejected claims 1, 2, 4, 8, 9, 12-14, 18, and 19 as being anticipated by USPN 5,927,739 issued to Evling. A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Brothers, Inc. v. Union Oil Co. of California*, 2 USPQ2nd 1051 at 1053 (Fed. Cir. 1987).

1. Traction Ring 100 Is Not Between the Pushrim and the Wheel

Applicants' independent claims 1 and 13 require an insert fit between the pushrim and the wheel. The Examiner indicates in the office action that the Examiner believes Evling's traction ring 100 is an insert compressibly fit between the pushrim and the wheel. Applicants respectfully submit that the Examiner misunderstands Evling and that once that misunderstanding is cleared up that the rejections will be withdrawn.

See Exhibit A, attached, which shows cross-sections of Evling's and Applicants' inventions side-by-side. Evling's hand rim assembly 22 is analogous to Applicant's pushrim. Evling's hand rim assembly 22 has a traction ring 100 and a metal braking rim 102. Evling column 5 lines 44-45. Evling's traction ring 100 is wholly contained, or fit, within channel 128 formed in Evling's braking rim 102. Evling FIGS. 2-4 and column 6, lines 32-39. Because the traction ring 100 is wholly within the channel 128, it is not fit between the wheel and the handrim assembly 22. Assuming *arguendo* that the traction ring 100 may be considered an insert, it does

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not come into contact with the wheel and does not enter the space between the wheel and the pushrim.

In contrast, Applicants' insert is fit between the wheel and the pushrim, preventing a user's hand from being caught between the pushrim and the wheel, as disclosed in the specification. Evling's traction ring 100 cannot prevent a user's hand from being caught between the pushrim (handrim assembly) and the wheel. A user of Evling's pushrim remains susceptible to the problem that Applicants' invention solves.

Therefore, Evling does not disclose an insert between the pushrim and the wheel, and Evling does not anticipate Applicants' claims. Applicants respectfully request that this rejection be withdrawn.

2. Evling Does Not Disclose a Pushrim Having a Non-Circular Cross-Section

Applicants' independent claim 13 requires a pushrim having a non-circular cross-section. Evling does not disclose that the hand rim assembly, which is the part most corresponding to Applicants' pushrim, can have a non-circular cross-section. The braking rim 102 has a "circle shaped" cross section with a channel 128 that accepts the traction ring 100. Evling column 7, line 26. The figures show that the hand rim retains the circular cross-section of the braking rim 102 once the traction ring 100 is placed in the channel 128. The "different cross-sectional configurations" described in column 7, lines 27-33, refer to the different shapes of the channel 128, as shown in FIGS. 2-4. Evling does not expressly or inherently disclose that the hand rim may have a non-circular cross-section.

Therefore, Evling does not disclose a pushrim having a non-circular cross-section, and Evling does not anticipate Applicants' claim 13. Applicants respectfully request that this rejection be withdrawn.

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3. Basis on Allowable Base Claims

Claims 2, 4, 8, 9, 12, 14, 18, and 19 are dependent on claims 1 and 13. As explained above, Applicants believe that claims 1 and 13 are not anticipated by Evling. Therefore, the Examiner is also requested to withdraw his rejection of dependent claims 2, 4, 8, 9, 12, 14, 18, and 19 based on their dependency on an allowable base claim.

III. Claim Rejection Under 35 USC §103(a)

A. Evling Does Not Teach or Suggest All Claim Limitations

The Examiner has rejected claims 5, 6, 10, and 11 as being obvious in light of Evling in view of design choices considered by the Examiner to be of routine skill in the art. A claim is *prima facie* obvious only if the prior art reference (or references when combined) teach or suggest all the claim limitations. MPEP §2143.

1. No Insert Between Wheel and Pushrim

As explained in Section II, Applicants respectfully submit that Evling does not disclose an insert fit between the wheel and pushrim, required by independent claim 1, on which claims 5, 6, 10, and 11 depend. The arguments of Section II above are incorporated herein. Assuming *arguendo* that the traction ring 100 may be considered an insert, it does not come into contact with the wheel and does not enter the space between the wheel and the pushrim.

2. Traction Ring Completes Circumference of Pushrim

To the extent Evling's traction ring 100 may be considered an insert, Evling teaches that the traction ring is contained within the pushrim and has an outer grippable *circumferential* section 104, which in turn has an outer, convex curved surface 108. The outer curved surface 108 may make up between 15 and 90 degrees of the circumference of the pushrim. See column 5, lines 57-66. Thus, the only portion of Evling's insert that is not contained *within* the

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circumference of the pushrim *completes* the circumference of the pushrim. Evling teaches away from an insert which is not part of the circumference of the pushrim and consequently teaches away from an insert which is compressibly fit between the pushrim and the wheel.

3. Shape Is Functional

Further, regarding claims 5 and 6, the selection of an elongated circle or oval as the cross-sectional shape of the pushrim is not a matter of design choice, but rather one of functional choice driven by several motivations described in the present detailed description. For example, a circular pushrim provides too little grippable surface area, increasing the pressure on the contact points of the hand during acceleration and braking. The increased pressure causes injury which may be significant due to the delicacy of the structures of the hand. Too little grippable surface area also affects the mechanical efficiency of propelling and stopping the wheelchair because muscular energy is directed to stabilizing the grip on the pushrim rather than to delivering power to the wheelchair. A greater grippable surface area results in a better distribution of force on the user's palm and fingers while providing more friction to enhance the mechanical efficiency of starting and stopping movements.

However, simply increasing the diameter of the circle is a poor solution because it makes the profile of the wheel and pushrim wider and more difficult to transport when not in use. An oval or elongated circular cross-section provides more gripping surface area while maintaining the size of the pushrim profile because the width of the pushrim does not need to be increased. The selection of these pushrim cross-sectional shapes is therefore not an obvious design choice because the shapes have distinct functional advantages over the circular cross-section disclosed in Evling.

Therefore, for one or more of the reasons set forth above, because the cited reference does not teach or suggest Applicants' claimed limitations, no

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prima facie case has been established. Applicants respectfully request that this rejection be withdrawn.

IV. Objections to Claims


The Examiner has objected to claims 3, 7, and 17 as being dependent upon a rejected base claim. Applicants submit that base claims 1 and 13, on which claims 3, 7, and 17 depend, are allowable in light of the arguments presented in Section II above. Therefore, Applicants respectfully request that the objections be withdrawn.

VII. Conclusion

Applicants respectfully submit that all objections and rejections have been traversed, and that the application is in form for issuance. Applicants respectfully request that the Examiner allow the application to proceed to issuance.

Respectfully submitted,

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Dated


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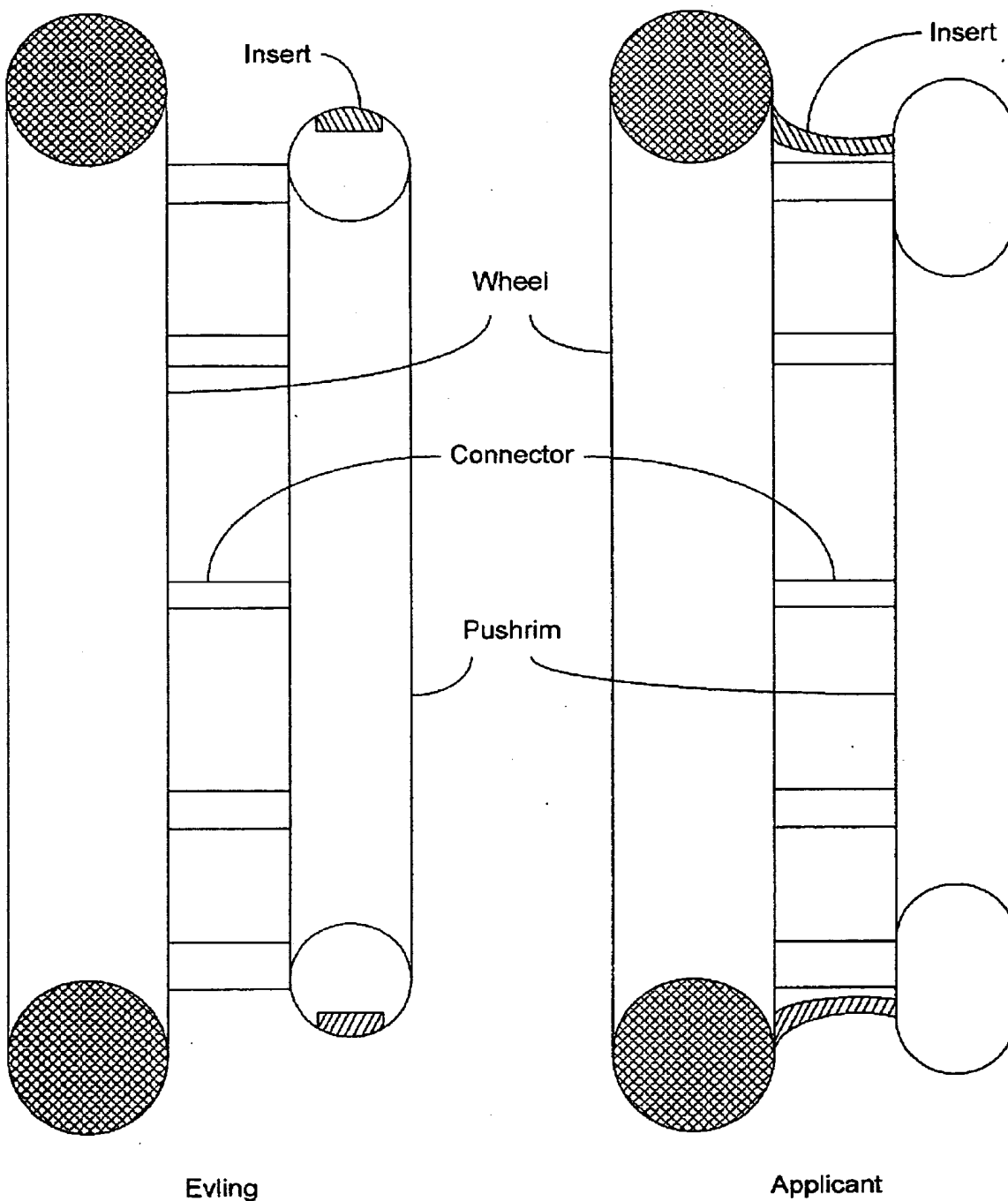


Exhibit A